

IN THE CLAIMS:

Please ~~CANCEL~~ claims 10, 11. Please ~~AMEND~~ the other claims as indicated below:

1. (Presently amended) A smart browser module comprising:
- an application layer interface coupled to a protocol stack, said application layer interface operative to receive at least one data packet comprising at least a portion of a target web page;
 - a user interface for interacting with a user;
 - a multilevel search control interface configured to accept at least two parameters, one that defines a content based search string and another that defines a linked set of documents that each have a hyperlink linkage of a specified range of linkage levels referenced from the target web page;
 - a set of portable executable program code that is responsive to the at least two parameters, and is programmed to perform a multilevel search to search each of the documents specified in the linked set of documents for the content that matches the content based search string, wherein documents in the linked set of documents are characterized in that they can be reached from the target through a sequence of N hyperlink activations, where N is a fixed integer;
 - a network based program module that causes at least a portion of the portable set of portable executable program code to be transmitted to a server that is adapted to accept executable code and to execute such code on behalf of one or more remote clients;
 - wherein upon being received at the server, at least some executable code that has been transferred from the browser module is permitted to execute at the server, and upon execution, the portion of the executable code that is executed orchestrates a multilevel search to cause the documents in the linked set of documents to be analyzed to determine whether they match the content based search string.
 - ~~a multilevel object factory coupled to receive a first input relating to said target web page and a second input from said multilevel search control interface, said multilevel object factory operative to specify a remote object agent that orchestrates a multilevel browser operation based upon said first and second inputs, whereby said remote object~~

~~agent is exported from said web browser to execute on a network server external from said smart browser.~~

2. (Previously presented) The browser of Claim 1, wherein said user interface comprises a window display providing an interactive menu to a user.

3. (Previously presented) The browser of Claim 2, wherein said user window is a part of a windows based graphical user interface.

4. (Previously presented) The browser of Claim 1, where said user interface comprises a voice interface.

5. (Previously presented) The browser of Claim 1, wherein said multilevel browser operation corresponds to a multilevel "find in page" operation.

6. (Presently amended) A multilevel-search browser plug-in module for coupling to a host browser, whereby the host browser comprises a markup language parser, and a user interface for coupling to a user, and an application layer communications interface, said application layer interface operative to receive at least one data packet comprising at least a portion of a target web page the plug-in module comprising:

a multilevel search control interface a set of portable executable program code that is responsive to the at least two parameters, and is programmed to perform a multilevel search to search each of the documents specified in the linked set of documents for the content that matches the content based search string, wherein documents in the linked set of documents are characterized in that they can be reached from the target through a sequence of N hyperlink activations, where N is a fixed integer;

a network based program module that causes at least a portion of the portable set of portable executable program code to be transmitted to a server that is adapted to accept executable code and to execute such code on behalf of one or more remote clients;

wherein upon being received at the server, at least some executable code that has been transferred from the browser module is permitted to execute at the server, and upon execution, the portion of the executable code that is executed orchestrates a multilevel search to cause the documents in the linked set of documents to be analyzed to determine whether they match the content based search string.

~~a multilevel object factory coupled to receive a first input relating to said target web page and a second input from said multilevel search control interface, said multilevel object factory operative to specify a remote object agent that orchestrates a multilevel browser operation based upon said first and second inputs, whereby said remote object agent is exported from said web browser to execute on a network server external from said smart browser.~~

7. (Previously presented) The plug-in module of Claim 6, wherein said plug-in module is embodied as Java™ code.

8. (Previously presented) The plug-in module of Claim 6, wherein said plug-in module is embodied as executable XML code.

9. (Presently amended) For use in a client browser, a method comprising the steps of:

obtaining application data from an application layer interface;

passing said information to a user via a user interface;

coupling a multilevel-search interface signal to a user, the multilevel search interface being configured to accept at least two parameters, one that defines a content based search string and another that defines a linked set of documents that each have a hyperlink linkage of a specified range of linkage levels referenced from a target web page, wherein documents in the linked set of documents are characterized in that they can be reached from the target through a sequence of N hyperlink activations, where N is a fixed integer;

~~accepting a parameter set via said multilevel search interface, said parameter set comprising least one parameter defining a multilevel browser operation;~~

~~generating a remote agent object for execution~~ set of executable program code and transmitting the set of executable program code to a remote server for execution on [[a]] the remote network server, whereby said remote agent object set of transmitted executable program code orchestrates the following acts:

(i) accessing a first markup language document and scanning said document to determine a hyperlink contained therein;

(ii) activating said hyperlink found in said step of accessing, wherein the hyperlink is restricted to be within the specified range N of hyperlinks relative to the target web page;

(iii) retrieving at least a portion of a second markup document associated with said hyperlink; and

(iv) comparing the contents of said at least a portion of said second markup document to at least a portion of said content based search string set parameter set.

10. (cancelled)

11. (cancelled)

12. (Previously presented) The method of Claim 9, wherein said parameter set content based search string includes a Boolean keyword expression ~~and an indication of the number of levels to search.~~

b' 13. (Previously presented) The method of Claim 9, wherein said client browser is hosted within a wireless mobile device and said parameter set includes information derived from an electronic positioning system.

14. (Presented amended) The method of Claim 9 wherein said remote agent object transmitted executable code further orchestrates the following act:

evaluating the results of the comparison and when said step of comparing reveals a match, coupling information related thereto to the user, and when said step of comparing does not yield a match, checking to see if the search is complete, and if it is not, accessing a next hyperlink and repeating the steps of activating, retrieving, and comparing, and evaluating.

15. (Presented amended) The method of Claim 9 14, wherein said step of evaluating further comprises the steps of:

when said information has been coupled to said user, awaiting a find-next signal, and when said find-next signal is received, checking to see if the search is complete, and if it is not, accessing a next hyperlink and repeating the steps of activating, retrieving, and comparing, and evaluating.

16. (Presently amended) The method of Claim 9, wherein said ~~parameter set~~ includes parameters include a Boolean keyword expression, an indication of the number

of levels to search, and an indication to continue the search on a designated-next-linked page.

17. (Previously presented) The method of Claim 9, wherein said hyperlink points to a metadata description of a web resource and said step of accessing involves accessing a file containing metadata relating to said resource.

18. (previously presented) The method of Claim 9, wherein said second markup document comprises a metadata description, said metadata description being described using a resource description framework (RDF) based language.

19. (Presently amended) In an intelligent client, a method of seeking information in an information network, the method comprising the steps of:

accessing a web page via said network connection using a client-server transaction;

presenting said web page to a user;

receiving a set of one or more multilevel search parameters to define a multilevel browsing operation over a graph of hyperlinks reachable from said web page in N hops, where N is a positive integer;

receiving a content based search parameter;

specifying in said intelligent client a remote agent object, set of transportable executable program code, and transmitting the transportable executable program code to a remote server that is adapted to execute the transportable executable program code, said remote agent object transportable executable program code operative to orchestrate the implementation of said multilevel browsing operation from a remote network node;

dispatching said remote agent object to a remote server for execution;

whereby said remote agent object wherein the transportable executable program code causes said multilevel browser function to be performed at least partially in said remote server, and wherein the multilevel browser function causes a set of specified links who are within N hyperlink hops of the web page to be searched for the content based search parameter.

20. (Presently Amended) The method of Claim 19, wherein transportable executable program code is represented as Java bytecodes, executes at least partially in

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an agent sandbox, and uses a remote method invocation based distributed object protocol to communicate with said intelligent client.
